

**16 September 2005
Amendment 3**

**STATEMENT OF WORK
FOR THE
LIGHT UTILITY HELICOPTER (LUH)**

**Prepared By
Light Utility Helicopter Product Office
PEO Aviation**

ATTACHMENT 2

Unclassified / Procurement Sensitive
Source Selection Information ~ See FAR 3.104

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1.0 SCOPE

This Statement of Work (SOW) describes the requirements for the Light Utility Helicopter (LUH), provides for the production and delivery of aircraft, allows for engineering services, and makes available Contractor Logistic Support to the delivered systems to include preparation/update of flight/operator manuals, training, procurement of parts, and field and depot maintenance.

1.1 BACKGROUND

The Army currently utilizes a mix of rotary wing aircraft to accomplish a wide range of administrative and logistical missions, as well as supporting the Homeland Security (HLS) role assigned to selected units of the Army National Guard (ARNG). These aircraft provide general support (GS) at various posts, camps, and stations both in the Continental United States (CONUS) and Outside the Continental United States (OCONUS). In most instances, the aircraft now assigned to these missions have reached their serviceable life and must be replaced. In other cases, the aircraft used in this role are much more capable than required for the role and consequently expensive to operate and maintain.

The light, GS mission requirements are satisfied by Tables of Organization and Equipment (TOE) and Tables of Distribution and Allowances (TDA) aircraft within both active and reserve components. General support TOE mission requirements include time-sensitive transport for urgently needed supplies, parts, equipment, documents, and/or personnel. The TDA light GS mission needs include observer/controller aircraft at Combat Training Centers (CTC), aircraft to provide force protection and installation security in sensitive areas (e.g., test sites, ranges, etc.), and chase/instrumentation aircraft for technical or operational testing.

1.2 OBJECTIVE

A need exists for a helicopter that can provide reliable and sustainable general and administrative support in non-hostile, non-combat environments at reduced acquisition and operating and support costs. The missions of LUH are primarily light GS (to include aerial transport of key personnel, air movement of supplies, and maintenance support), Generating Force Medical Evacuation (MEDEVAC), reconnaissance, and test and training support. When the operational need arises, the LUH will facilitate the commander's ability to conduct disaster relief operations, civil search and rescue, augmentation of UH-60 MEDEVAC aircraft, counter drug operations, conduct of Homeland Security, and other mission requirements such as catastrophic emergencies and support to civilian agencies against internal threats or national emergencies if directed by the President. It has been determined that the intended mission of the replacement helicopter can best be satisfied through the acquisition of an aircraft that is Federal Aviation Administration (FAA) certified. The LUH is the Army's solution to meet these requirements.

2.0 APPLICABLE DOCUMENTS

The Document Summary List (DSL) is provided at Attachment 1. The DSL identifies documents by number, title, and date. The document versions specified on the DSL take precedence over the generic references (without revision letters) cited in the SOW.

3.0 REQUIREMENTS

3.1 PROGRAM MANAGEMENT

The Contractor shall perform program management in accordance with (IAW) the Contractor's proposed Program Management Approach as incorporated into the contract.

3.1.1. RESPONSIBILITIES

The Contractor shall be responsible for providing all materials, personnel, equipment, facilities, and hardware/software required to manage this contract. The Contractor shall provide all technical, planning, management and manufacturing efforts to produce the LUH IAW paragraph 3.2 of this SOW and to complete the tasks of this SOW. The Contractor shall have a single Program Manager accountable for the entire LUH program.

3.1.2. POST AWARD CONFERENCE

The Contractor shall host a post award conference at the Contractor's production facility within 30 days of contract award. At this review the Contractor shall present the program management team and a comprehensive overview of the Contractor's plan to execute and manage the LUH program IAW this SOW. The Contractor shall coordinate an agenda with the Government Product Manager's Office ten working days prior to the Conference.

3.1.3. Information Exchange Reviews

The Contractor shall host Information Exchange Reviews (IER) quarterly for the first two contract years and semi-annually thereafter. The Contractor shall demonstrate progress to date in translation of contractual requirements into a producible and sustainable LUH. The Contractor shall be prepared to conduct IERs via video-teleconference (VTC) and/or face-to-face at the Government's discretion. The Contractor shall allow the Government to review and evaluate any quality issues.

3.1.4. Integrated Master Schedule

The Contractor shall prepare and update the Integrated Master Schedule (IMS) IAW DI-MGMT-81650 and deliver IAW Contract Data Requirements List (CDRL) A001. The IMS shall include a linked, detailed schedule in Microsoft Project (.mpp) format for achieving aircraft deliveries. The IMS shall include at a minimum a detailed schedule

for final assembly and all major sub-assemblies for production. The capability of achievement of logistics milestones to meet support requirements of this contract will also be included. The Contractor shall also present IMS information to the Government at each IER.

3.1.5. Risk Management

The Contractor shall identify schedule and performance risks and risk mitigation strategies. The Contractor shall present this information to the Government at each IER.

3.1.6. DATA MANAGEMENT

3.1.6.1. TECHNICAL DATA

The Contractor shall provide the Government access to all technical data utilized in the production and support of the LUH program.

3.1.6.2. CONTRACTOR INTEGRATED TECHNICAL INFORMATION SERVICES (CITIS)

The Contractor shall establish and maintain a CITIS, which shall be operational within 30 days after contract award and throughout the life of the contract. The contractor shall maintain a single LUH CITIS providing integrated data services to include the procedures, hardware, software applications, data communication and database services for the generation, integration, storage, management, exchange, delivery, and distribution of technical and management data in support of all Engineering, Production, Quality, Logistics, Program Management, and Configuration Management functions of the LUH. All items placed on CITIS along with corresponding history shall be retained throughout the life of the contract. No classified data shall be placed on CITIS.

3.1.6.2.1. INTERFACE SERVICES

The CITIS shall provide a single, common, standard interface for user access to all CITIS services and applications. The Contractor shall provide applications that enable users to update, in real time, the data elements for which they are responsible. The primary interface shall support user access via the Program Management Office (PMO) standard Web Browsers (Netscape and Internet Explorer). The CITIS shall enable PMO users to establish on-line access to the information and services of the CITIS without needing to first determine the location and access method for the desired data. Security mechanisms to ensure the integrity and protection of all CITIS information shall be employed. The Contractor shall provide any unique software applications required to access/utilize the CITIS.

3.1.6.2.2. DATA SUBMISSION

The Contractor shall submit all data items electronically via CITIS. Content of these electronic data items shall be IAW the appropriate DD Form 1423 and the Data Item

Description (DID). In the event the CITIS is inoperable for any reason when a data item delivery is due, the Contractor shall notify the Government of the problem with recommended resolution, including a temporary method for data delivery. In such cases, the Contractor shall place the data items delivered via the temporary method on the CITIS promptly after the CITIS is operable.

3.1.7. CONFIGURATION MANAGEMENT (CM) PROGRAM

The Contractor shall adhere to the Configuration Management approach defined in the Contractor's proposal and incorporated into the contract. The CM approach shall include and describe the obsolescence mitigation approach. The Contractor shall ensure that all configuration changes are documented and visible to the Government to ensure continual adherence to the performance requirements of the LUH. The Contractor shall host Government verifications of the CM practices and procedures semi-annually. The Contractor shall permit access to the Contractor's facility and documents for this purpose. The Contractor shall document the incorporation of any aircraft configuration updates filed with the FAA for the LUHs delivered under this contract. The CM approach shall also include methods for processing Government requests for changes, if any. When modifying the LUH configuration, the Contractor shall submit a letter to the Contracting Officer that includes a summary description of the anticipated changes and their impacts to the LUH. The Contractor shall obtain written approval from the Contracting Officer before making changes that will (i) impact the form, fit, or function of the aircraft (generally defined as a Class I change as described in MIL-HDBK-61); (ii) modify the Configuration List (see paragraph 3.2.4); and/or (iii) degrade LUH performance (see paragraph 3.2.3). The request shall also describe effects, and mitigation efforts, on contract performance requirements and path forward plans if obsolescence issues affect requirements. Changes not directed by the Government shall not be the basis for any equitable adjustment. The Contractor shall present CM information, including but not limited to status of TC modifications and STCs submitted to the FAA, and obsolescence projections and mitigation analyses, at each IER.

3.1.8. ENVIRONMENTAL

All Contractor and subcontractor activities shall be in compliance with federal, state, local, and international environmental laws and regulations for Hazardous Material Management. The Contractor shall ensure that design, maintenance, operation, manufacturing, programmatic decisions, and trade-off studies strive to eliminate or reduce hazardous materials and wastes. The Contractor shall prepare a Hazardous Materials Management Program (HMMP) Plan IAW National Aerospace Standard (NAS) 411 and DI-MGMT-81398 and deliver IAW CDRL A002. The Contractor shall not use substances listed in Emergency Planning and Community Right-to-Know Act (EPCRA) Section 313 "toxic chemicals" and EPCRA Section 302, "extremely hazardous substances" (available at <http://www.epa.gov/ceppo/pubs/title3.pdf>), or products containing such substances, without Government approval. The Contractor shall request approval to use substances identified in the EPA 17 - list (available at

<http://www.epa.gov/opptintr/3350/33finb1.htm>) only if there is no other viable material. The Contractor shall not use any Class I Ozone Depleting Chemical/Ozone Depleting Substance (ODC/ODS) (identified at <http://www.epa.gov/ozone/ods.html>) in the manufacture of items required by this SOW, unless a waiver is obtained from the Government. The Contractor shall provide, by letter to the Contracting Officer, immediate notification of any proposed hazardous material mitigation/elimination efforts that may adversely impact schedule or performance. The Contractor shall prepare annual HMMP Progress Reports IAW DI-MISC-81397 and deliver IAW CDRL A003,

3.1.9. CORROSION PREVENTION AND CONTROL PROGRAM

The Contractor shall maintain a Corrosion Prevention and Control Program and adhere to best commercial practices in its execution.

3.1.10. Contractor ManPOWER Reporting

The Office of the Assistant Secretary of the Army (Manpower & Reserves Affairs) operates and maintains a secure Army data collection site where the contractor will report ALL contractor manpower (including subcontractor manpower) required for performance in this contract. The contractor is required to completely fill in all information and submit to <https://contractormanpower.army.pentagon.mil>. The required information includes: (1) Contracting Office, Contracting Officer, Contracting Officer's Technical Representative; (2) Contract Number, including task and delivery order number; (3) Beginning and ending dates covered by reporting period; (4) Contractor name, address, phone number, e-mail address, identity of contractor employee entering data; (5) Estimated direct labor hours (including subcontractors); (6) Estimated direct labor dollars paid this reporting period (including subcontractors); (7) Total payments (including subcontractors); (8) Predominant Federal Service Code (FSC) reflecting services provided by contractor (and separate predominant FSC for each subcontractor, if different); (9) Estimated data collection cost; (10) Organizational title associated with the Unit Identification Code (UIC) for the Army Requiring Activity (the Army requiring Activity is responsible for providing the contractor with its UIC for the purposes of reporting this information); (11) Locations where contractor and subcontractors perform the work (specified by zip code in the United States and nearest city, country, when in an overseas location, using standard nomenclature provided on website); (12) Presence of deployment or contingency contract language; and (13) Number of contractor and subcontractor employees deployed in theatre this reporting period (by country). As part of its submission, the contractor will also provide the estimated total cost (if any) incurred to comply with this reporting requirement. Reporting period will be the period of performance not to exceed 12 months ending 30 September of each government fiscal year and must be reported by 31 October of each calendar year. Contractors may use a direct XML data transfer database server or fill in the fields on the website. The specific formats for the XML direct transfer may be downloaded from the web site.

3.1.11. RESERVED

3.1.12. system safety

The Contractor shall adhere to the System Safety approach, consistent with MIL-STD-882 (as a guide), defined in the Contractor's proposal and incorporated into the contract. The Contractor's System Safety approach shall delineate processes to ensure operational safety and that the level of safety and crashworthiness present in the LUH will not be degraded. The Contractor shall allow the Government to review and evaluate any safety issues and safety data. The Contractor shall review, evaluate, and address all safety issues as well as Government identified safety issues, which may adversely impact the LUH using a Safety Risk Management Matrix. The Contractor shall present safety information (i.e. technical failures, airworthiness issues, accidents/incidents, etc.) at each IER.

3.1.13. Service bulletins and Airworthiness directives

The Contractor shall notify and deliver all LUH Original Equipment Manufacturer (OEM) Service Bulletins and FAA Airworthiness Directives via CITIS within 24 hours of development of the Service Bulletin or receipt of the FAA Airworthiness Directive. For OEM Service Bulletins and FAA Airworthiness Directives, which require aircraft grounding, the Contractor shall immediately notify the Government Product Manager and the Contracting Officer, or designees.

3.1.14. QUALITY

The Contractor shall have a Quality Program and adhere to best commercial practices in its execution. The Contractor's Quality Program shall delineate processes to ensure that the quality level of all processes, including but not limited to manufacturing, total logistics support, and continuing engineering analyses, will not be degraded during the life of the LUH. The Contractor shall also present Quality information to the Government at each IER.

3.1.15 SYSTEMS ENGINEERING

The Contractor shall adhere to the Systems Engineering approach defined in the Contractor's proposal and incorporated into the contract. The Contractor's Systems Engineering approach shall delineate processes for integrating specialty functions of Systems Engineering Management; System Integration; Configuration Management; Data Management; Reliability, Maintainability and Testability; System Safety; Environmental; Human Factors Engineering (HFE); Test and Evaluation (to include System Testing and Aircraft Testing); and Logistic Support. The Contractor shall also present Systems Engineering information to the Government at each IER.

3.2 PRODUCTION

The Contractor shall deliver all LUHs configured in the Standard Mission Configuration (Reference Annex A paragraph A.1.1) and IAW all subordinate paragraphs. The Contractor shall be responsible for providing all materials, personnel, equipment, facilities, and hardware/software required to produce aircraft for this contract. There shall be no Government Furnished Equipment (GFE) nor Government Furnished Material (GFM) utilized in support of this contract.

3.2.1. FAA CERTIFICATION

The Contractor shall have and maintain the currency of the FAA Type Certificate (FAA Form 8110-9), Amended Type Certificate (TC), and/or Supplemental Type Certificates (STC) for Title 14 Code of Federal Regulations (CFR) Rotorcraft, Normal (CFR Part 27) or Transport (CFR Part 29), throughout the life of the contract. The LUH shall be certified for operation under both Visual Flight Rules (VFR) and Instrument Flight Rules (IFR). The Contractor shall obtain an STC, amended Type Certificate, or verification that a valid STC exists for all components used on the LUH as well as any changes or modifications made to the LUH aircraft. The Contractor shall deliver a copy of the latest Amended or Supplemental Type Certificate(s) by first aircraft delivery to the Contracting Officer.

3.2.2. AIRWORTHINESS CERTIFICATION

The Contractor shall deliver a Standard Airworthiness Certificate (FAA Form 8100-2) with each LUH. . In addition, the Contractor shall provide up-to-date maintenance logbooks, and all other information documenting current airworthiness including but not limited to inspections; and weight and balance determination.

3.2.3. PERFORMANCE SPECIFICATION

The Contractor shall deliver LUHs IAW the Performance Specification, with the equipment incorporated into the aircraft described in paragraph 3.2.4, defined in the Contractor's proposal and incorporated into the contract.

3.2.4. Configuration List

The Contractor shall deliver LUHs IAW the Configuration List defined in the Contractor's proposal and incorporated into the contract. The Configuration List shall consist of major components, subcomponents, and mission equipment to include the MEDEVAC equipment (paragraph 3.2.6.1) and the man-rated hoist (paragraph 3.2.6.2). These items shall be listed by manufacturer name, nomenclature, software version number (if appropriate), and model/part number. Additionally, the Configuration List should list the exterior paint specification and color of the delivered aircraft.

3.2.5. ProducIBILITY/MANUFACTURING

3.2.5.1. **PRODUCIBILITY/MANUFACTURING APPROACH**

The Contractor shall adhere to the Producibility/Manufacturing Approach defined in the Contractor's proposal and incorporated into the contract. The Contractor shall present producibility and manufacturing information to the Government at each IER.

3.2.5.2. **PRODUCTION RISK ASSESSMENT**

The Government will conduct a Production Risk Assessment (PRA) review to evaluate risk and overall readiness of the Contractor's manufacturing and quality systems. The PRA will be performed approximately 240 days after Contract award. The Contractor shall host each PRA at the Contractor's facility. Both prior to and during the PRA, the Contractor shall make available to the Government the working papers, documents, and data developed and/or utilized to manufacture products under this contract. The Contractor shall include subcontractors and major suppliers at the PRA. The Government will provide the Contractor a detailed PRA plan no more than 45 days prior to the PRA.

3.2.6. MEDEVAC Capability

3.2.6.1. **MEDEVAC (A-KIT)**

The Contractor shall deliver, as an integral part of the LUH, a MEDEVAC (A-Kit) capability. Note: The A-Kit is composed of all non-removable hardware and adapters for the safe installation of two standard North Atlantic Treaty Organization (NATO) Litters.

3.2.6.2. **MEDEVAC (B-KIT)**

The Contractor shall deliver a MEDEVAC (B-Kit) as exercised IAW Section B of RFP. Note: The B-Kit is composed of all removable hardware and adapters for the installation of two standard NATO Litters (NATO Litters not included). The Contractor shall include field installation instructions, and in the Flight/Operators Manual, with each B-Kit.

3.2.7. HOIST

3.2.7.1. **HOIST (A-KIT)**

The Contractor shall deliver, as an integral part of the LUH, a Hoist (A-Kit) capability. Note: The A-Kit is composed of all non-removable hardware and adapters for the installation of a hoist. The Contractor shall document any operating limitations associated with the use of the selected hoist.

3.2.7.2. HOIST (B-KIT)

The Contractor shall deliver a Hoist (B-Kit) as exercised IAW Section B. Note: The B-Kit is composed of the hoist and all removable hardware and adapters for the installation and operation of a hoist. The Contractor shall also include field installation instructions in addition to the Flight/Operator's Manual with each B-Kit.

3.2.8. GOVERNMENT Acceptance Test Procedures (GATP)

3.2.8.1. REQUIREMENT FOR GATP

Defense Contract Management Agency (DCMA) representatives (pilots and non-flying personnel) will conduct the GATP that will include a limited verification of delivered aircraft equipment against the Performance Specification and Configuration List as part of the DD250 acceptance of each aircraft. The DCMA Flight Representative will be the approval authority for all DD250 aircraft flights. The Contractor shall provide all resources, manpower and supplies required to perform and support the GATP, including, but not limited to: spares, repair parts, consumables including POL, and maintenance services (field and sustainment/depot level). The Contractor shall provide a copy of the Contractor's in-house acceptance testing and flight test procedures 60 days prior to the GATP of the initial aircraft delivery. The Contractor shall provide updates/changes to the Contractor in-house acceptance test procedures and flight test procedures to the Government representative 30 days prior to subsequent GATP if changes have been made to the Contractor acceptance tests.

3.2.8.2. CONTRACTOR ACCEPTANCE TESTING

The Contractor shall provide access to the Government of the results of Contractor in-house acceptance testing, including flight test of each delivered aircraft, prior to each GATP.

3.2.9. On-board Documentation

The Contractor shall provide the following aircraft on-board documentation with delivery of each LUH: FAA Standard Airworthiness Certificate, Maintenance Log Books, Rotorcraft Flight/Operator Manual, and Check List for each acceptance test.

3.2.10. Weight and Balance Calculations

The Contractor shall perform aircraft weighing and balancing IAW the publications supporting the FAA certification. A copy of the current weight and balance determination shall be provided as part of the aircraft's Log Book.

3.2.11. TECHNICAL MANUALS

3.2.11.1. MAINTENANCE MANUAL

The Contractor shall provide Technical Maintenance Manuals suitable for field maintenance to support the LUH. The Contractor shall deliver one hardcopy and one CD-ROM (.pdf format) of the Maintenance Manual with each LUH delivery.

3.2.11.2. FLIGHT/OPERATOR MANUAL

The contractor shall provide technical flight/operator manuals to support the LUH. The contractor shall deliver two hardcopies and one cd-rom (.pdf format) of the flight/operator manual with each LUH delivery.

3.2.12. PAINTING AND MARKING

3.2.12.1. PAINTING

The LUH exterior shall be primed and coated IAW best commercial practices.

3.2.12.2. MARKING

3.2.12.2.1. MILITARY SERIAL NUMBER

“US ARMY” should be painted in large black letters on each side of the tail boom. Marking shall be completed with a compatible paint to that used on the exterior. The serial number should be painted in black on each side in a visible location. Additionally, the FAA-assigned “N” number shall be painted, using the same type paint to mark the aircraft with its US Army serial number, immediately below the US Army serial number. The last four digits of the military serial number should be painted in black four-inch letters on the nose of the aircraft

3.2.12.2.2. UNIQUE IDENTIFICATION (UID)

The contractor shall mark the LUH aircraft with Unique Identification (UID) marking in accordance with MIL-STD-130 requirements. The UID shall be marked in ECC200 compliant two dimensional data matrix symbol on the aircraft data plate. The contractor shall register and validate the UID with the DOD UID registry. The Contractor shall report at the time of delivery, either as part of or associated with the Material Inspection and Receiving Report, the following information in accordance with the data submission procedures at [HTTP://FRWEBGATE.ACCESS.GPO.GOV/CGI-BIN/LEAVING.CGI?FROM=LEAVINGFR.HTML&LOG=LINKLOG&TO=HTTP://WWW.ACQ.OSD.MIL/DPAP/UID/DATASUBMISSION.HTM](http://FRWEBGATE.ACCESS.GPO.GOV/CGI-BIN/LEAVING.CGI?FROM=LEAVINGFR.HTML&LOG=LINKLOG&TO=HTTP://WWW.ACQ.OSD.MIL/DPAP/UID/DATASUBMISSION.HTM):

(1) Concatenated unique item identifier; or DoD recognized unique identification equivalent.

- (2) Unique item identifier type.
- (3) Issuing agency code (if concatenated unique item identifier is used).
- (4) Enterprise identifier (if concatenated unique item identifier is used).
- (5) Original part number.
- (6) Lot or batch number.
- (7) Current part number (if not the same as the original part number).
- (8) Current part number effective date.
- (9) Serial number.
- (10) Government's unit acquisition cost.

3.2.13. PRODUCTION CERTIFICATION

The Contractor shall obtain and maintain the currency of an FAA issued or endorsed Production Certificate through the life of the contract. The Contractor shall deliver a copy of the latest Production Certificate for the LUH by first aircraft delivery to the Contracting Officer.

3.3. STORAGE AND FLYAWAY

3.3.1. STORAGE AFTER ACCEPTANCE

The Contractor shall secure, protect, and store Government accepted aircraft at the Contractor's CONUS facility for no more than 60 days after Government acceptance. The Contractor shall maintain Government accepted aircraft in flyable status IAW the OEM's Flight/Operator's Manual and shall maintain the Maintenance logbooks, forms and records.

3.3.2. Unit flyaway

For those aircraft which the Government has already accepted but have remained in Contractor storage, the Government will notify the contractor of its intent to flyaway aircraft at least ten days prior to the flyaway date. The Contractor shall ensure each LUH is fully mission capable in the Standard Mission Configuration (Annex A Paragraph A.1.1) for its scheduled flyaway date.

3.3.2.1. PREPARATION FOR OCONUS SHIPMENT

For those aircraft which the Government identified in Section B as destined for shipment OCONUS and for which acceptance has been completed but have remained in Contractor storage, the Government will notify the contractor at least ten days prior to the date the aircraft shall be readied for OCONUS shipment. Upon notification of shipping method, delivery location, and shipping date, the Contractor shall prepare each LUH for OCONUS shipment.

3.3.2.2. RETURN TO FLIGHT OF AIRCRAFT SHIPPED OCONUS

The Contractor shall return the aircraft to a flyaway condition, including Maintenance Test Flight (MTF) at the OCONUS receiving unit location. The Contractor shall provide a return to service statement certifying that the LUH is fully mission capable in the Standard Mission Configuration.

3.3.3. PROCEDURAL TRAINING (PT) DEVICE

3.3.3.1. PT HARDWARE

The Contractor shall deliver a cockpit procedural trainer designed to maintain proficiency of pilot skills, under day, night, night vision goggles (NVG), VFR and IFR conditions, without the use of the actual aircraft. The procedural trainer shall accurately reflect cockpit instrumentation and any caution/system status indicator displays, coupled with cockpit control and switch sequence and position. The PT will incorporate visual environments and shall be capable of scenario generation (i.e., simulation of faults/failures on the caution/system status indicator) by the instructor. The PT shall be a stand-alone device and will not be integrated into the aircraft or any institutional-type trainer. Simulation of aircraft motion and vibration is not required.

3.3.3.2. PT MANUALS

The Contractor shall provide Operators' Manuals IAW FAA regulation and OEM procedures. The Contractor shall provide one hardcopy and one CD-ROM (.pdf format) of PT manuals with the PT delivery.

3.3.3.3. PT SUPPORT

3.3.3.3.1. PT PUBLICATIONS

The Contractor shall provide, IAW the Contractors approach, Operators' Manuals for the Procedural Trainer (PT) that are compliant with FAA Regulations and OEM procedures. The Contractor shall provide one hardcopy and one CD ROM (pdf format) of the PT Operators' Manual to the LUH Product Office 120 days after contract award. The Contractor shall maintain currency of the PT Operators' manuals for the previously fielded and current delivery of LUH configuration(s). The Contractor shall distribute changes to the Users and LUH Product Office IAW the Contractor's proposed PT

Support Approach and incorporated into the Contract. The Contractor shall provide a web-based system for ordering and purchasing additional PT Operators' Manuals.

3.3.3.3.2. PT MAINTENANCE

The Contractor shall provide maintenance and ensure currency of the PT reflecting previously fielded and current LUH configuration(s).

3.4. LOGISTICS SUPPORT

3.4.1. Contractor logistic Support (CLS)

The Contractor shall provide technical, engineering, and logistical services and supplies to support and ensure continued airworthiness (IAW FAA regulations, OEM procedures, and AR 95-20) of the LUH. The Contractor shall adhere to the Logistics Support Approach defined in the Contractor's proposal and incorporated into the contract. The Contractor shall adhere to the measures of performance defined in Section H-2. The Contractor shall maintain a web-based maintenance data system, accessible through CITIS, for the purposes of work ordering, managing, and monitoring repair programs and/or work in process. The FAA will be the airworthiness authority for the continued airworthiness of the LUH aircraft.

3.4.1.1. MAINTENANCE SUPPORT

The Contractor shall provide maintenance support at both field and sustainment/depot levels. A description of the two level maintenance concept for field and sustainment/depot is provided in Section H. The Contractor shall maintain or restore the LUH to flying status IAW FAA regulations and OEM procedures. The Contractor shall provide fully qualified personnel (possessing the appropriate license and/or certification IAW FAA regulations) to conduct LUH maintenance and maintenance flight operations. The Contractor shall conduct all Maintenance Test Flights (MTF) and Maintenance Operational Checks (MOC) as required by the OEM procedures, AR 95-20 and approved by the Government Flight Representative (GFR). The Contractor shall provide a return to service statement certifying that the LUH is fully mission capable. The Contractor shall provide petroleum, oil, and lubricants (POL) at sustainment/depot level.

3.4.1.1.1. TOOLS, FIXTURES AND SUPPORT EQUIPMENT

The Contractor shall provide and maintain all tools, fixtures and support equipment for the maintenance, repair, and calibration of the LUH.

3.4.1.2. SUPPLY SUPPORT

The Contractor shall provide serviceable parts IAW FAA regulations support at both field and sustainment/depot levels. The Contractor shall be responsible for managing and monitoring the return and evacuation of unserviceable spare/repair parts from

fielded locations and Contractor repairing activities. The Contractor may restore, repair, and/or overhaul of unserviceable spare/repair parts to serviceable condition IAW FAA regulations. The Contractor shall be responsible for the disposal of repair spare/repair parts which will not be returned to serviceable condition IAW OEM procedures and FAA regulations.

3.4.1.3. PUBLICATIONS

The Contractor shall provide, IAW the Contractor's Logistics Support Approach, technical manuals for Flight/Operator and Maintenance that are compliant with FAA regulation and OEM procedures. The Contractor shall provide one hardcopy and one CD-ROM (.pdf format) of the Flight/Operator and Maintenance Manuals to the LUH Product Manager Office 120 days after contract award. The Contractor shall maintain currency of the technical manuals for the previously fielded and current delivery of LUH configuration(s). Changes shall be distributed to users and LUH Product Office IAW the Contractor's Logistics Support Approach. The Contractor shall provide a web-based system for ordering and purchasing additional publications.

3.4.1.4. FACILITIES

The Contractor shall provide and maintain licenses and/or certifications for Contractor-owned facilities IAW FAA regulations throughout the duration of this contract. The Contractor shall maintain currency of Contractor facilities for support of previously fielded and current delivery LUH configuration(s). The Government will provide access/use of existing flightline facilities, as defined in Section H, for normal daily support of LUH flight operations.

3.4.1.5. TRANSPORTATION

The Contractor shall provide transportation for aircraft and spare/repair parts between the aircraft location and Contractor repairing activities and installations. In the event the Government determines it is in its best interest to transport the aircraft to or from a repair activity, the Contractor shall support the actual transportation.

3.4.1.6. PACKAGING, HANDLING, AND STORAGE

3.4.1.6.1. PACKAGING & HANDLING

The Contractor shall utilize best commercial practices for packaging and handling of the LUH aircraft and spare/repair parts.

3.4.1.6.2. STORAGE

The Contractor shall provide storage in support of LUH such as parts storage, return of unserviceable spare/repair parts awaiting induction to repair, serviceable aircraft awaiting shipment, and unserviceable aircraft awaiting evaluation and disposition. The Contractor shall provide storage IAW FAA Regulation and OEM procedures. The

Contractor shall secure and protect LUH aircraft awaiting induction. If required, and to prevent further damage to the LUH, the Contractor shall utilize storage facilities to provide protection against harsh weather environment and aircraft degradation. The Contractor shall secure, protect, and maintain the LUH aircraft in flyable condition subsequent to maintenance completion.

3.4.2. HYBRID CONTRACTOR LOGISTICS SUPPORT

The Contractor shall provide technical, engineering, and logistical services and supplies to support and ensure continued airworthiness (IAW FAA regulations and OEM procedures) of the LUH. The Contractor shall adhere to the Logistics Support Approach defined in the Contractor's proposal and incorporated into the contract. The Contractor shall adhere to the measures of performance defined in Section H-2. The Contractor shall maintain a web-based maintenance data system, accessible through CITIS, for the purposes of work ordering, managing, and monitoring repair programs and/or work in process. The FAA will be the airworthiness authority for the continued airworthiness of the LUH aircraft.

3.4.2.1. MAINTENANCE SUPPORT

The Contractor shall provide maintenance support at depot/sustainment level, anticipated for the ARNG. The Contractor shall perform depot/sustainment maintenance to maintain or restore the LUH to flying status IAW FAA regulations and OEM procedures. The Contractor shall provide fully qualified personnel (possessing the appropriate license and/or certification IAW FAA regulations) to conduct LUH maintenance and maintenance flight operations. The Contractor shall conduct all Maintenance Test Flights (MTF) and Maintenance Operational Checks (MOC) as required by the OEM procedures, AR 95-20, and approved by the Government Flight Representative (GFR). The Contractor shall provide a return to service statement certifying that the LUH is fully mission capable. The Contractor shall provide petroleum, oil, and lubricants (POL) at depot/sustainment level.

3.4.2.1.1. TOOLS, FIXTURES AND SUPPORT EQUIPMENT

3.4.2.1.1.1. FIELD LEVEL SPECIAL TOOLS, FIXTURES AND SUPPORT EQUIPMENT

The Contractor shall provide and maintain all special tools, fixtures and support equipment for the user to perform field level maintenance, repair, and calibration of the LUH.

3.4.2.1.1.2. DEPOT/SUSTAINMENT LEVEL TOOLS FIXTURES & SUPPORT EQUIPMENT

The Contractor shall provide and maintain all tools, fixtures and support equipment for the Contractor to perform sustainment/depot level maintenance, repair, and calibration of the LUH.

3.4.2.2 SUPPLY SUPPORT

The Contractor shall provide serviceable parts IAW FAA regulations support at both field and sustainment/depot levels. The Contractor shall be responsible for managing and monitoring the return and evacuation of unserviceable spare/repair parts from fielded locations and Contractor repairing activities. The Contractor may restore repair, and/or overhaul of unserviceable spare/repair parts to serviceable condition IAW FAA regulations. The Contractor shall be responsible for the disposal of repair spare/repair parts which will not be returned to serviceable condition IAW OEM procedures and FAA regulations.

3.4.2.3. PUBLICATIONS

The Contractor shall provide technical manuals (Flight/Operator and Maintenance) that are compliant with FAA regulation and OEM procedures. The Contractor shall maintain currency of the technical manuals for the previously fielded and current delivery of LUH configuration(s). Changes shall be distributed to users and LUH Product Office IAW the Contractor's Logistics Support Approach. The Contractor shall provide a web-based system for ordering and purchasing additional publications. The Contractor shall review and evaluate technical manual comments received from the User.

3.4.2.4. FACILITIES

The Contractor shall provide and maintain licenses and/or certifications for Contractor-owned facilities IAW FAA regulations throughout the duration of this contract. The Contractor shall maintain currency of Contractor facilities for support of previously fielded and current delivery LUH configuration(s). The Government will provide access/use of existing flightline facilities for normal daily support of LUH flight operations.

3.4.2.5. TRANSPORTATION

The Contractor shall provide transportation for aircraft and spare/repair parts between the aircraft location and Contractor repairing activities and installations. In the event the Government determines it is in its best interest to transport the aircraft to or from a repair activity, the Contractor shall support the actual transportation.

3.4.2.6. PACKAGING, HANDLING, AND STORAGE

3.4.2.6.1. PACKAGING & HANDLING

The Contractor shall utilize best commercial practices for packaging and handling of the LUH aircraft and spare/repair parts.

3.4.2.6.2. STORAGE

The Contractor shall provide storage in support of LUH such as parts storage, return of unserviceable spare/repair parts awaiting induction to repair, serviceable aircraft awaiting shipment, and unserviceable aircraft awaiting evaluation and disposition. The Contractor shall provide storage IAW FAA Regulation and OEM procedures. The Contractor shall secure and protect LUH aircraft awaiting induction. If required, and to prevent further damage to the LUH, the Contractor shall provide storage facilities to protect against harsh weather environment and aircraft degradation. The Contractor shall secure, protect, and maintain the LUH aircraft in flyable condition subsequent to maintenance completion.

3.4.3. CONTRACTOR FIELD TEAMS (CFT)

The Contractor shall provide technical support to fielded locations and Materiel Fielding Teams (MFTs) on an as needed and/or on call basis as delineated in the Contractor's CFT approach. The CFT may be required to perform field level maintenance, limited sustainment/depot level maintenance, and/or engineering and technical assistance. The FAA will be the airworthiness authority for the continued airworthiness of the LUH aircraft.

3.4.4. OVER AND ABOVE MAINTENANCE

The Contractor shall inspect and conduct over and above maintenance resulting from crash damage and any conditions, exclusions, exceptions, disclaimers, or limitations identified in the Contractor's Approach. All other maintenance actions, except those directed by the Government in paragraph 3.4.3, will be performed IAW paragraphs 3.4.1 and 3.4.2. The Contractor shall provide storage facilities to protect against harsh weather environment and aircraft degradation. The Contractor shall maintain or restore the LUH to flying status IAW FAA regulations and OEM procedures. The Contractor shall provide fully qualified personnel (possessing the license and/or certification IAW FAA regulations) to conduct LUH maintenance and maintenance flight operations. The Contractor shall conduct all MTF and MOC as required by the OEM procedures. The Contractor shall provide a return to service statement certifying that the LUH is fully mission capable. The Contractor shall provide petroleum, oil, and lubricants (POL) at depot/sustainment level. The FAA will be the airworthiness authority for the continued airworthiness of the LUH aircraft.

3.4.5. TRAINING

The Contractor shall provide a training program for both operation and field maintenance of the LUH. The Contractor shall adhere to the Commercial Training Approach defined in the Contractor's proposal and incorporated into the contract. The Government shall have limited data rights permitting internal Government use in all materials delivered under the training program. The training program and course material shall cover all areas to train personnel in the safe operation and conduct of field maintenance of the LUH. The Contractor shall conduct training at a CONUS facility. The Contractor shall provide all items required to conduct the training program such as

personnel, instructor pilots, training aircraft, training aids, devices, simulators and simulations, copies of courseware, facilities, hangers, classrooms, and provision for training aircraft maintenance.

3.4.5.1. TRAINING ADMINISTRATION

Upon successful completion of training, the Contractor shall provide a certificate of completion and a qualification letter to the trainee student for inclusion in the trainee's personnel file.

3.4.5.2. PILOT TRANSITION TRAINING

The Contractor shall conduct LUH pilot transition training that includes ground operation and flight training in day, night, and VFR/IFR flight. The Contractor shall complete training for unit fielding no more than four weeks prior to United States Government (USG) flyaway. The Contractor shall also conduct transition training for nineteen Initial Operational Test (IOT) pilots, which shall be completed forty-two days prior to the delivery of the first aircraft.

3.4.5.3. MAINTAINER TRAINING

The Contractor shall conduct initial maintainer training to provide the skills and knowledge for maintenance and maintenance related personnel, previously qualified as a rotary wing aircraft mechanic. The training shall include the proper operation of all aircraft systems and mission related equipment. The Contractor shall also conduct maintainer training for three IOT maintainers, which shall be completed forty-two days prior to the delivery of the first aircraft.

3.4.5.4. PT TRAINING

The Contractor shall provide PT training to enable an operator to set up, check out, operate, and utilize the PT and perform operator maintenance.

3.5. SUSTAINMENT TRAINING PROGRAM

The Contractor shall deliver a training program, prepared in IAW DI-SESS-81521 and deliver IAW CDRL A007, for development of a sustainment program to be utilized by the Government in the generation of unit level skills for pilots and maintainers after initial fielding. The Government shall have limited data rights permitting internal Government use in all materials delivered under the training program. The training program and course materiel shall cover all areas to train personnel in the safe operation of the LUH.

3.6. ENGINEERING SERVICES (ES)

3.6.1. PURPOSE

The Contractor shall provide engineering services relating to the design, performance capabilities, logistics support, maintenance and operation of the LUH System. Services include the areas of systems configuration management, quality assurance, field data collection, investigation and corrective action necessary to support user operations and support activities, airworthiness and systems safety, safety of flight activities and accident investigations, and design analysis and tradeoff to improve reliability and supportability, evaluation of aircraft performance and support considering potential LUH design changes, enhancements to the operational capability, integration of new or modified Government Furnished Equipment (GFE) or commercial equipment, if any, and evaluation of functionality while maintaining the integrity of the LUH Airworthiness and Certification. The Contractor shall be responsible for obtaining access to all technical data and for all other requirements necessary to this contract, except wherein specifically identified in this contract as not required.

3.6.2. SYSTEMS ENGINEERING FOR ES

The Contractor shall integrate Systems Engineering into all tasks required to complete the tasks in the Engineering Services Memoranda (ESM). The Contractor shall use systems engineering in the design and implementation of product modifications.

3.6.3. Engineering Services Memoranda (ESM)

The Contractor shall conduct Systems Engineering tasks at the direction of the Government. The specific tasks to be performed are further defined using sub-ESMs. The Government will approve all sub-ESMs prior to the Contractor starting work on the task. The Sub-ESMs shall contain both man-hours and a dollar value limitation. Sub-ESMs shall contain time-phased technical milestones and planned monthly man-hours, anticipated material dollar expenditures and total cost to task completion. The Contractor shall not exceed the funding allocated for each sub-ESM. The Contractor shall notify the Government when seventy five percent of the funds allocated to a sub-ESM have been expended and provide an estimate for funds required to complete task.

3.7. TRAVEL

The Contractor shall travel in support of SOW paragraphs 3.4.3 and 3.6.

ANNEX A SYSTEM ATTRIBUTES

A.1.0 GENERAL SYSTEM ATTRIBUTES

The LUH system attributes are defined as threshold and objective requirements.

A.1.1 STANDARD MISSION CONFIGURATION

The LUH shall conduct missions while in a standard mission configuration. The standard mission configuration is described as follows:

- 2 Pilots @ 206 pounds each;
- 1 Crew Chief @ 206 pounds;
- Crew equipment @ 20 pounds;
- All Mission Equipment (ME) installed (communication/navigation equipment including antennas, and External Cargo Hook);
- All specified A-Kits installed (Hoist and MEDEVAC); and
- All passenger seats and restraint systems for six passengers (the six passengers includes the Crew Chief).

The weight of combined crew and associated equipment constituting the standard mission configuration is 638 pounds, less fuel, ME, A-Kits, and passenger seats and restraint systems.

A.1.2 MEDEVAC MISSION CONFIGURATION

The LUH conducting MEDEVAC missions shall be configured as follows:

- 2 Pilots @ 206 pounds each;
- 1 Crew Chief @ 206 pounds;
- 1 Medical Attendant @ 206 pounds;
- Crew equipment @ 20 pounds;
- All ME installed (communication/navigation equipment including antennas);
- All specified A-Kits and B-Kits installed (MEDEVAC and Man-rated Hoist);
- Two passenger seats and restraint systems (Medical Attendant and Crew Chief);
- Two NATO standard litters with patients @180 pounds each; and,
- Medical equipment @ 100 pounds.

The weight of combined crew and associated equipment constituting the MEDEVAC mission configuration is 1304 pounds, less fuel, ME, A-Kits, B-Kits, and passenger seats and restraint systems.

A.2.0 TECHNICAL SYSTEM ATTRIBUTES.

(Threshold = Objective unless otherwise stated).

A.2.1 AVIONICS/ELECTRONICS

A.2.1.1 COMMUNICATION AND NAVIGATION SUITE

The LUH communication and navigation threshold and objective attributes are listed below in Table 1. The LUH shall be operable under IFR operations as a threshold attribute. Communication and navigation system redundancy is not required unless specified in Table 1. The LUH shall be able to receive and transmit on VHF-AM, while simultaneously operating on any other band. When operating in either VHF-AM or UHF-AM aviation bands, simultaneous monitoring of Guard frequency in that band is required. Two VHF-AM Transceivers are required for aircraft operating in IFR under European Aeronautical Information Publications and ICAO procedures. The LUH navigational and communication suite shall be compatible (use of an adapter interface is acceptable with current Army flight helmet headsets and microphones.

Table 1: Communication & Navigation Attributes

Interface	Attribute	Threshold	Objective
Air Traffic Control Military Air Forces	VHF AM	Non-Secure Voice	VHF data link mode 2 and mode 3 KY-58 Encryption Compatible Secure Voice
	118 to 152 MHz	2 x VHF-AM Transceivers are required	
	25 KHz & 8.33 KHz channel spacing	Simultaneous VHF-AM Guard receive capability is required when on a VHF-AM net	
United States Coast Guard	VHF FM	Non-Secure Voice	Threshold =Objective
	156 to 174 MHz		
	25 KHz channel spacing		
Federal Government, Emergency	VHF FM	Non-Secure Voice	KY-58 Encryption Compatible Secure Voice,

Interface	Attribute	Threshold	Objective
organizations and agencies	30 to 88 MHz		Single Channel Ground and Airborne Radio System (SINCGARS) Improvement Program (SIP) Compatible, ESIP Waveform Compatible
	(25 KHz channel spacing)		
Federal Government, Emergency organizations and agencies	UHF AM	Non-secure Voice	Secure Voice KY-58 Encryption Compatible; HAVEQUICK II compatible
	225 to 399.075 MHz	Simultaneous UHF-AM Guard receive capability is required when on a UHF-AM net	
	25 KHz channel spacing		
Public Safety - Federal Agencies, State and Local Government, State and Local Law Enforcement, Fire & Rescue	UHF/VHF	Non-secure Voice	Multikey Encryption Standards (DES/DES SL/DES-OFB) & over the air rekey (OTAR); Full APCO P-25 compliance.
	132 to 174 MHz	UHF/VHF analog and digital compatible with Motorola's Single Site Trunking Algorithms (SMARTNET); Motorola's Wide Area Trunking Algorithms (SMARTZONE), APCO's Project 25 Frequency Division Multiple Access (FDMA) digital technology; Project 25 Common Air Interface (CAI) Mission configurable to support operation in any 2 selected bands (1 net at a time)	
	403 to 512 MHz		
	5, 6.25, 8.33, 12.5 and 25 KHz channel spacing		
	800 to 900 MHz		
	700 MHz		
Navigation Facilities	VOR	2 VOR receivers, ILS Localizer with GS, MB, and	2010 Compliance with Global Air Traffic

Interface	Attribute	Threshold	Objective
	108.10 to 117.95 MHz	DME. FAA Certified for IFR flight in FAA and ICAO airspace.	Management requirements for US and International Operations.
	50 KHz channel spacing		
	ILS Localizer, Glide Slope and Marker Beacon		
	108.10 to 111.59 MHz (ILS) 329.10 to 334.85 MHz (GS) 75 MHz (MB)		
	Global Navigations Satellite System (GNSS): Global Positioning System (GPS)	GPS certified for non-precision IFR approaches.	Wide Area Augmentation, Local Area Augmentation System (IFR certified for precision approaches) Capable of integrating M Code. Precise Positioning Service (PPS).
Transponder		Mode 3/A, C, S	Mode 1,2,4 & 5
Radar Altimeter	NVG Compatible	Integrated	

A.2.1.2 SYSTEMS OPERABILITY

The LUH should have dual operating stations with all aircraft controls and instruments operable and viewable from both crew stations. The LUH should be single pilot operable under VFR operations. All LUH systems should be electromagnetically compatible in all configurations and modes of operation.

A.2.1.3 IMAGE INTENSIFICATION COMPATIBILITY

The LUH aircraft, cabin, and cockpit lighting and displays/consoles should be Class A compatible with image intensification devices and systems (Night Vision Goggles).

A.2.1.4 INTERCOMMUNICATIONS SYSTEM

As a threshold attribute, the LUH should have an intercommunication system (ICS) capable of internal voice communication among crew and passengers.. The ICS should be capable of passenger control of push-to-talk (PTT), earphones, and microphone capabilities of any aircraft radio.

A.2.1.5 ELECTROMAGNETIC VULNERABILITY

The LUH should operate throughout the global airspace system and not be susceptible to electromagnetic effect or disturbance to flight critical functions to the extent specified by the FAA.

A.2.1.6 COCKPIT VOICE RECORDER / FLIGHT DATA RECORDER

The LUH should have a digital cockpit voice recorder (CVR) and a digital flight data recorder (FDR) that satisfies the requirements of Title 14 CFR Part 27 (Subparagraphs 1457, 1459, and 1501) and/or Part 29 (Subparagraphs 1457, 1459, and 1501).

A.2.2 AIRCRAFT PERFORMANCE

A.2.2.1 PERFORMANCE

a. The LUH shall be able to hover out of ground effect (HOGE) under sea level standard day conditions (0' PA, 59° F) environment while in the MEDEVAC mission configuration with an internal mission load as defined in paragraph A.1.2 and weight representing the fuel required to meet the endurance capability of A.2.2.2 below.

b. The LUH should have provisions to safely tie down and transport cargo or a combination passengers and cargo.

A.2.2.2 ENDURANCE

The LUH should have an endurance capability of at least 2.8 hours of operation (plus 30-minutes of fuel reserve) without refueling or the use of auxiliary fuel. This attribute must be attainable in the standard mission configuration, in Standard Day Conditions, with an internal mission load consisting of 1,250 pounds. The endurance scenario is described as:

- a. Two minutes of engine warmup at Maximum Continuous Power (MCP);

- b. Flight of 2.8 hours consisting of (i) a takeoff at sea level and climb to 4000 feet, (ii) cruise for best endurance power setting/speed, and (iii) a descent to landing.

A.2.2.3 INTERNAL AND EXTERNAL LOAD

A.2.2.3.1 INTERNAL LOAD

The LUH, in the standard mission configuration should have the capability to hover out of ground effect (HOGE) in a high/hot (4,000' pressure altitude/95° Fahrenheit) environment with an internal mission load consisting of 1,250 pounds and weight representing the fuel required to meet the endurance capability of A.2.2.2, using no more than 100% Maximum Rated Power (MRP) for takeoff.

A.2.2.3.2 EXTERNAL LOAD

The LUH, in the standard mission configuration should have the capability to hover out of ground effect (HOGE) in a high/hot (4,000' pressure altitude/95° Fahrenheit) environment with an external mission load utilizing a cargo hook with a load capacity of 2,200 pounds and weight representing the fuel required to meet the endurance capability of A.2.2.2, using no more than 100% MRP for takeoff.

A.2.2.4 AUTOROTATION

The LUH should provide the capability to safely auto-rotate to a safe landing with loads (no external load) up to the aircraft maximum gross weight.

A.2.2.5 OPERATIONAL RANGE

The LUH should have an operational range of a minimum of 217 Nautical Miles (NM) in zero wind conditions and in level flight. This attribute must be attainable in a high/hot (4,000' pressure altitude/95° Fahrenheit) environment and in the standard mission configuration with an internal mission load consisting of 1,250 pounds and fuel necessary to meet this range capability.

A.2.2.6 HANDLING QUALITIES

A.2.2.6.1 HANDLING QUALITIES (THRESHOLD)

The LUH, during tactical and training maneuvers, should have handling qualities not worse than Level 2, with average Cooper-Harper Handling Quality Ratings (HQR) not greater than 5, for each maneuver. For degraded systems/emergency maneuvers, the LUH should have handling qualities not worse than Level 2, with average HQRs not greater than 6, for each maneuver.

A.2.2.6.2 HANDLING QUALITIES (OBJECTIVE)

The LUH, during tactical and training maneuvers, should have handling qualities not worse than Level 1, with average Cooper-Harper Handling Quality Ratings (HQR) not greater than 3, for each maneuver. For degraded systems/emergency maneuvers, the LUH should have handling qualities not worse than Level 2, with average HQRs not greater than 5, for each maneuver.

A.2.2.7 CRUISE AIRSPEED

The LUH should have an airspeed capability of at least 125 knots (true airspeed) in level flight. This attribute must be attainable at maximum continuous power in a high/hot (4,000' pressure altitude/95° Fahrenheit) environment and in the standard mission configuration defined in paragraph A.1.1 with an internal mission load consisting of 1,250 pounds and weight representing the fuel required to meet the endurance capability of A.2.2.2.

A.2.2.8 FUEL COMPATIBILITY

For all aircraft operating conditions, the LUH should be compatible with standard fuels (JP-4, JP 5, JP 8, JP-8+100, and commercial equivalents) without adjustments of engine fuel control. The LUH will use JP-8 as the primary fuel.

A.2.2.9 OPERATIONAL ENVIRONMENT

The LUH operational environments include both sea level standard and high/hot conditions. The LUH will operate in urban and complex terrain, as well as in/over forest, deserts, farmlands, and water (both inland and costal) in tropical, arid, frozen, wet, snow, icing, fog, moderate icing, moderate turbulence, adverse weather, and dust conditions, both day and night and in both low and clear visibility conditions. The LUH should be fully operable (functional) at ambient temperatures ranging from -40° C to +55° C.

A.2.2.10 STARTUP TIMELINE

A.2.2.10.1 AIRCRAFT SYSTEM STARTUP

The LUH should have a start up time for all systems, except cockpit displays, to be fully operational of no more than five minutes after start initiation for normal temperature (-40° C to +55° C.) environmental conditions. Winterization kits may be used in extreme cold environments as long as mission completion is not jeopardized.

A.2.2.10.2 COCKPIT DISPLAY SYSTEM STARTUP

The LUH aircraft cockpit display systems should be operable within ten minutes after start initiation in temperature environments from -40° C to +55° C. Winterization kits may be used in extreme cold environments as long as mission completion is not jeopardized.

A.2.3 PHYSICAL CHARACTERISTICS

A.2.3.1 CABIN SIZE

The LUH cabin size requirement is defined in two operational scenarios, MEDEVAC Mission Configuration or Passenger (Standard Mission Configuration). The threshold requirement shall accommodate the MEDEVAC mission configuration, as defined at Paragraph A.1.2 above, when not in the Passenger mode (Paragraph A.1.1). (Threshold = Objective)

A.2.3.1.1 MEDEVAC ROLE

The LUH internal cabin size in the MEDEVAC mission configuration, defined at Paragraph A.1.2 above, shall have points of entry and exit to accommodate the ease of loading, unloading, providing medical attention (attending to patients). The transport and security of two NATO standard litters (NSN 6530-01-380-7309) with patients and associated medical equipment to include, but not limited to, the following: Jungle Penetrator (NSN 4240-00-199-7353), Rescue and Transport System, Patient (NSN 6530-01-260-1222), medical equipment set, and Backboard (NSN 6530-01-490-2487) is required. The cabin size shall be sufficient to allow a medical attendant to perform medical duties on two litter bound patients, as well as accommodate normal crew operations.

A.2.3.1.2 PASSENGER ROLE

The LUH internal cabin size shall be configured in standard mission configuration, as defined at Paragraph A.1.1 above.

A.2.3.2 FORCE PROTECTION

The LUH shall accommodate flight operations by the aircrew (5th percentile female to 75th percentile male) while wearing the Air Warrior ensemble described herein. The crew must be able to operate all required aircraft flight controls, such as but not limited to cyclic, collective, and pedals, throughout their full range of motion with no more than a ten percent reduction in the maximum usable envelope from a baseline without use of any Air Warrior components. The LUH crew will utilize the following Air Warrior components: Primary Survival Gear Carrier (PSGC) equipped with contents specified in Attachment 12, Modified Chemical Protective Undergarment (MCPU), Anti-Exposure Suit (CWU-62), Low-Profile Floatation Collar (LPFC), HGU-56P helmet, and Improved Aircrew Battle Dress Uniform. The M-9 pistol, pistol holster and M-9 magazines are not included in this requirement.

A.2.3.3 SURVIVABILITY

The LUH shall provide for occupant protection in a survivable emergency landing impact. The LUH seating, restraint systems, and structure shall incorporate design standards that protect aircraft occupants from excessive impact loads by energy management and from excessive longitudinal impact loads and possible secondary impact with the structure by proper occupant restraint. The standard for this requirement is that the aircraft shall meet the design standards for crashworthiness and survivability as defined by the Title 14, CFR Part 27 or Part 29, Sections 561, 562, 785 and 952 as of December 31, 1989 (T) and as of December 31, 1994 (O).

A.2.3.4 HOIST

A.2.3.4.1 MAN-RATED HOIST

The LUH should incorporate a man-rated hoist with the following capabilities:

- a. Capable of lifting at least 600 pounds with at least 250 feet of usable cable;
- b. Operable with the aircraft in the MEDEVAC mission configuration (Paragraph A.1.2) and two litter-bound patients;
- c. Non-interference with internal cabin operations such as medical attendant performing medical duties on two litter bound patients and crew performing normal operations.

A.2.3.4.2 HOIST STOWAGE

All hoist related equipment should be capable of being stowed, when not in use, in such a manner that it does not interfere with any internal cabin operations.

A.2.3.4.3 HOIST PROVISIONS

The LUH should have provisions to secure the Crew Chief within the aircraft and to safely perform hoist operations, load patients, and other in-flight duties while not constrained to his seat and with cabin doors open.

A.2.3.5 WIRE STRIKE PROTECTION

The LUH should include a wire strike protection system that will protect at least 90 percent of the frontal area without degrading aircraft flight performance, mission accomplishment, or crew function.

A.2.3.6 SYSTEM GROWTH POTENTIAL

The LUH should provide space, weight, and electrical power for potential system upgrades to mission equipment. The anticipated enhancements are projected to

have an approximate combined weight of not more than 200 pounds and include capabilities such as:

- FLIR;
- Video down link;
- Search light;
- Three Air Warrior MicroClimate Cooling Units (MCU), three System Coolant Umbilicals, and mounting brackets. (Each MCU measures approximately 11" x 7 "x 6", Weighs 13 pounds, and requires 28 volts, 12 amps direct current);
- Tactical Satellite (TACSAT); 30 amps DC, 18" X 6" X 4" at 30 lbs and an antenna with mounts, bus, and/or wiring for the integration; Communications and Navigation Attribute objectives (Table 1).

A.2.3.7 NUCLEAR, BIOLOGICAL, & CHEMICAL CONTAMINATION SURVIVABILITY (NBCCS)

The LUH should be capable of performing all missions in a Nuclear, Biological, or Chemically (NBC) contaminated environment and be capable of external decontamination, through washing with detergent and water, to negligible risk levels.

A.2.3.8 OPEN PORT AND PRESSURE REFUEL

The LUH should be capable of being refueled using standard commercial pressure systems. The LUH should also be capable of being refueled using open port refuel systems.

A.2.3.9 HUMAN FACTORS ENGINEERING

The LUH should accommodate operators, maintainers, and support personnel in the 5th percentile female through 95th percentile male population, using MIL-STD-1472 as a guide, without impacting the ability of the crew to operate all critical controls and conduct emergency procedures. The aircraft flight controls, displays, symbology, and operating procedures should be intuitive and minimize the possibility of errors and fatigue, as well as eliminate high workload for the crew. Health and safety hazards to operators and maintainers will be identified and eliminated or reduced through appropriate personnel protection methods and procedures.

A.2.3.10 TRANSPORTABILITY

The LUH should be capable of unrestricted air (C-17 and C-5), marine (lighter ships, Seabee barge/ships, roll-on/roll-off ships, seatrains ships, and fast sealift ships) and highway transport (Army tactical trailers and commercial air ride trailers). The LUH should be capable of unrestricted highway transport on both

U.S. and NATO highways (as described in MIL-STD-1366, paragraph 5.1) when loaded on standard Army tactical trailers or commercial air ride trailers. The LUH should have lifting and tie down provisions that meet the requirements of MIL-STD-209. The transport of a LUH should not cause aircraft or aircraft sub-systems damage or degrade aircraft or aircraft subsystem performance.

A.2.3.11 FIRE SUPPRESSION BUCKET

The LUH should have a power interface required to operate a “Bambi-bucket”, or equivalent, fire suppression bucket.

A.2.3.12 CREW EQUIPMENT STOWAGE

The LUH should have a capability to provide sufficient stowage space (two cubic feet) for critical crew equipment (20 pounds) without degrading performance of any onboard system, reducing crashworthiness, or impeding aircrew and passenger safety.

A.3.0 RELIABILITY/AVAILABILITY/MAINTAINABILITY (RAM) SYSTEM ATTRIBUTES

A.3.1 MISSION RELIABILITY

The LUH should have a 90% probability (threshold) and a 95% probability (objective) of successfully completing a 3.67-hour mission without experiencing a mission abort.

A.3.2 OPERATIONAL AVAILABILITY/MEAN TIME TO REPAIR (MTTR)

A.3.2.1 OPERATIONAL AVAILABILITY

The LUH should achieve an operational availability rate of not less than 80 percent (threshold) and an operational availability rate goal of not less than 90 percent (objective).

A.3.2.2 MEAN TIME TO REPAIR (MTTR)

The LUH should have a MTTR not exceed two hours (threshold) and a MTTR goal not to exceed one hour (Objective).